wherein each spatial birefringent element defines two light paths, each light path having a different optical path length and wherein a difference in optical path length between the two paths is provided by a material having an index of refraction greater than one which is disposed within at least a portion of one of the first and second paths, the difference in optical path lengths being sufficient to facilitate interleaving.

25. (currently amended) The interleaver as recited in claim ~~25~~ 24, further comprising a polarization rotator configured to make the two components approximately the same in polarization with respect to one another prior to the two components being transmitted back through the birefringent element assembly.

26. (currently amended) The interleaver as recited in claim ~~25~~ 24, wherein the reflector comprises a prism.

27. (currently amended) The interleaver as recited in claim ~~25~~ 24, wherein the reflector comprises a mirror.

28. (currently amended) The interleaver as recited in claim ~~25~~ 24, wherein the polarization rotator comprises a half-wave waveplate.

29. (currently amended) The interleaver as recited in claim ~~25~~ 24, wherein the reflector comprises a mirror and a quarter-wave waveplate.

30. (currently amended) The interleaver as recited in claim ~~25~~ 24, wherein the birefringent element assembly comprises a plurality of spatial birefringent elements.

31. (currently amended) The interleaver as recited in claim ~~25~~ 24, wherein the birefringent element assembly comprises a first birefringent element having an equivalent angular orientation of φ_1, a second birefringent element having an equivalent angular orientation of φ_2 and a third birefringent element having an equivalent angular orientation of φ_3;

wherein an order of the first birefringent element, second birefringent element, and third birefringent element is selected from the group consisting of:

first birefringent element, second birefringent element, third birefringnet element;

third birefringent element, second birefringent element, first birefringent element; and

wherein the equivalent angular orientations are with respect to an equivalent polarization direction of light entering the birefrigent element assembly.

32. (currently amended) The interleaver as recited in claim ~~25~~ 24, wherein the birefringent element assembly comprises:

a first birefringent element having an equivalent angular orientation of 45° and having a phase delay of Γ:

a second birefringent element having an equivalent angular orientation of -21° and having a phase delay of 2Γ: and

a third birefringent element having an equivalent angular orientation of 7° and having a phase delay of 2Γ.

33. (currently amended) The interleaver as recited in claim ~~25~~ 24, wherein the birefringent element assembly comprises two birefringent elements.

34. (currently amended) The interleaver as recited in claim ~~25~~ 24, wherein the birefringent element assembly comprises:

a first birefringent element having an equivalent angular orientation of 45° and having a phase delay of Γ: and

a second birefringent element having an equivalent angular orientation of -21° and having a phase delay of 2Γ.

35. (currently amended) The interleaver as recited in claim ~~25~~ 24, wherein the birefringent element assembly and the reflector are configured so as to facilitate interleaving of a plurality of input light beams simultaneously.

36. (currently amended) The interleaver as recited in claim ~~25~~ 24, wherein interleaved channels have spacing which is tunable by changing the distance between polarization beam splitter and the reflector.

37. (currently amended) An interleaver comprising:

a birefringent element assembly comprising at least one spatial birefringent element, the birefringent element assembly providing two output components;

a reflector configured to direct the two components from the birefringent element assembly back through the birefringent element assembly; and

wherein each spatial birefringent element defines two light paths and wherein an index of refraction is different for at least a portion of at least one of the two light paths so as to cause the two light paths to have different optical path lengths, the difference in optical path lengths being sufficient to facilitate interleaving.

38. (previously presented) The interleaver as recited in claim 37, further comprising a polarization rotator configured to make the two components approximately the same in polarization with respect to one another prior to the two components being transmitted back through the birefringent element assembly.

39. (previously presented) The interleaver as recited in claim 37, wherein the reflector comprises a prism.

40. (previously presented) The interleaver as recited in claim 37, wherein the reflector comprises a mirror.

41. (previously presented) The interleaver as recited in claim 37, wherein the polarization rotator comprises a half-wave waveplate.

42. (previously presented) The interleaver as recited in claim 37, wherein the reflector comprises a mirror and a quarter-wave waveplate.

43. (previously presented) The interleaver as recited in claim 37, wherein the birefringent element assembly comprises a plurality of spatial birefringent elements.

44. (currently amended) The interleaver as recited in claim 37, wherein the birefringent element assembly comprises a first birefringent element having an equivalent angular orientation of φ_1, a second birefringent element having an equivalent angular orientation of φ_2 and a third birefringent element having an equivalent angular orientation of φ_3;

wherein an order of the first birefringent element, second birefringent element, and third birefringent element is selected from the group consisting of:

first birefringent element, second birefringent element, third ~~birefringnet~~ birefringent element;

third birefringent element, second birefringent element, first birefringent element; and

wherein the equivalent angular orientations are with respect to an equivalent polarization direction of light entering the birefrigent element assembly.

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45. (previously presented) The interleaver as recited in claim 37, wherein the birefringent element assembly comprises:

a first birefringent element having an equivalent angular orientation of 45° and having a phase delay of Γ:

a second birefringent element having an equivalent angular orientation of -21° and having a phase delay of 2Γ: and

a third birefringent element having an equivalent angular orientation of 7° and having a phase delay of 2Γ.

46. (previously presented) The interleaver as recited in claim 37, wherein the birefringent element assembly comprises two birefringent elements.

47. (previously presented) The interleaver as recited in claim 37, wherein the birefringent element assembly comprises: